



VIRGINIA

COVID-19 Update October 15th, 2020

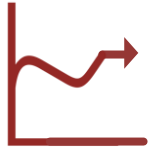
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A team of RAND researchers was asked by the Commonwealth of Virginia to review available information on COVID-19 models of the commonwealth to determine the strengths and weaknesses of each model and their relevance to decisionmaking. The work of the research team will be documented in a forthcoming RAND research report. The information in this presentation is intended to keep policymakers abreast of the latest findings of the research team.

This research was sponsored by the Commonwealth of Virginia and conducted by the RAND Corporation. RAND is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest. For more information, visit www.rand.org.



Bottom-Line Up Front



Virginia's total case level increased

- Most counties saw increases
- Hospitalizations also increased for the first time in more than two months
- Testing levels are near their recent peak



Additional triggers could lead to a rapid rise in the coming months

- Seasonal changes
- Holiday interactions

Cheaper, faster testing or a vaccine could reduce the spread if widely deployed



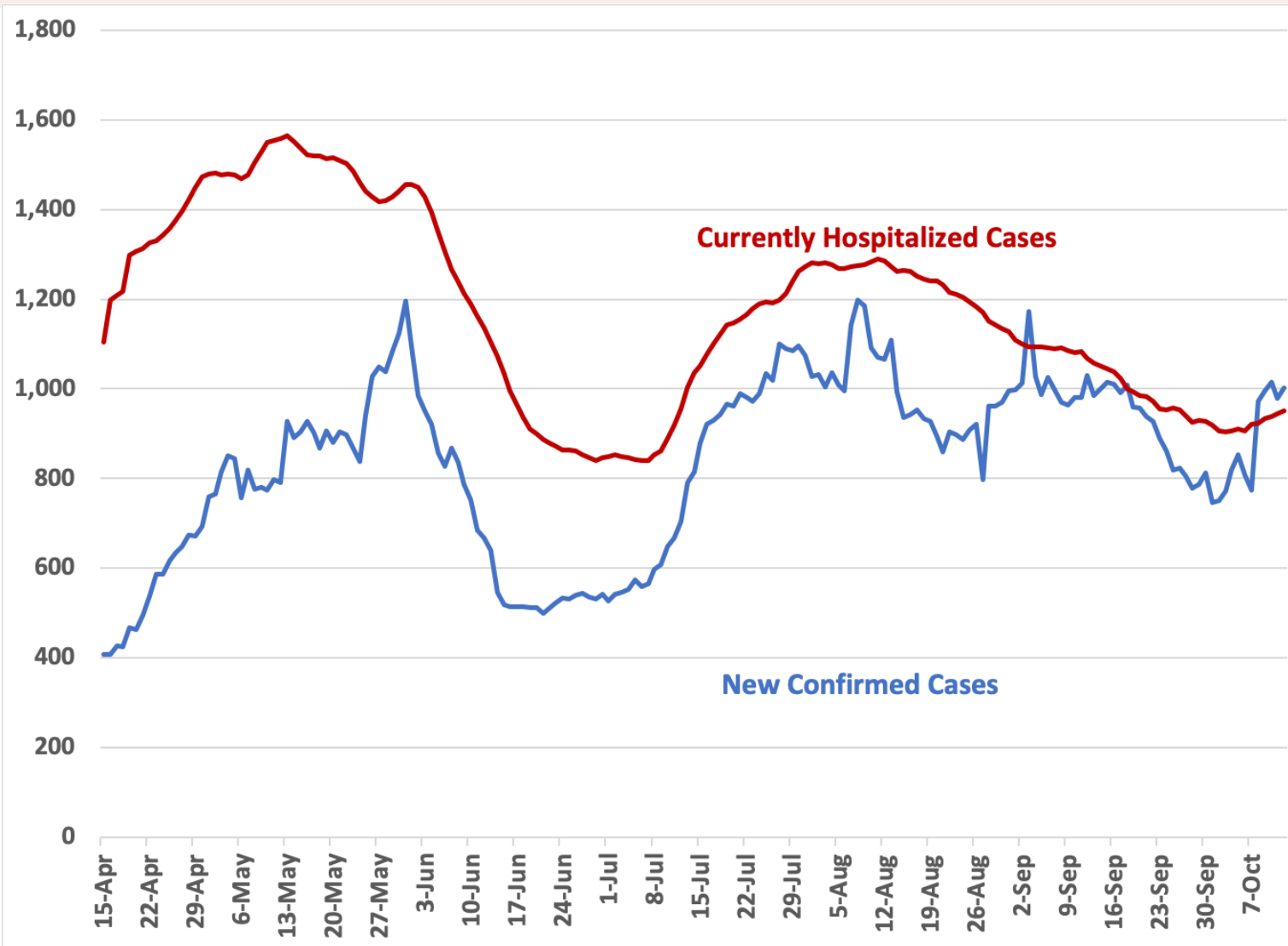
Modeling is less useful for forecasting because behavioral responses are driving current trends

- Models will continue to be very useful for comparing policies and exploring scenarios

Changes in testing practices may change data quality in ways that make it difficult to produce consistent data series



Cases and hospitalizations rose last week



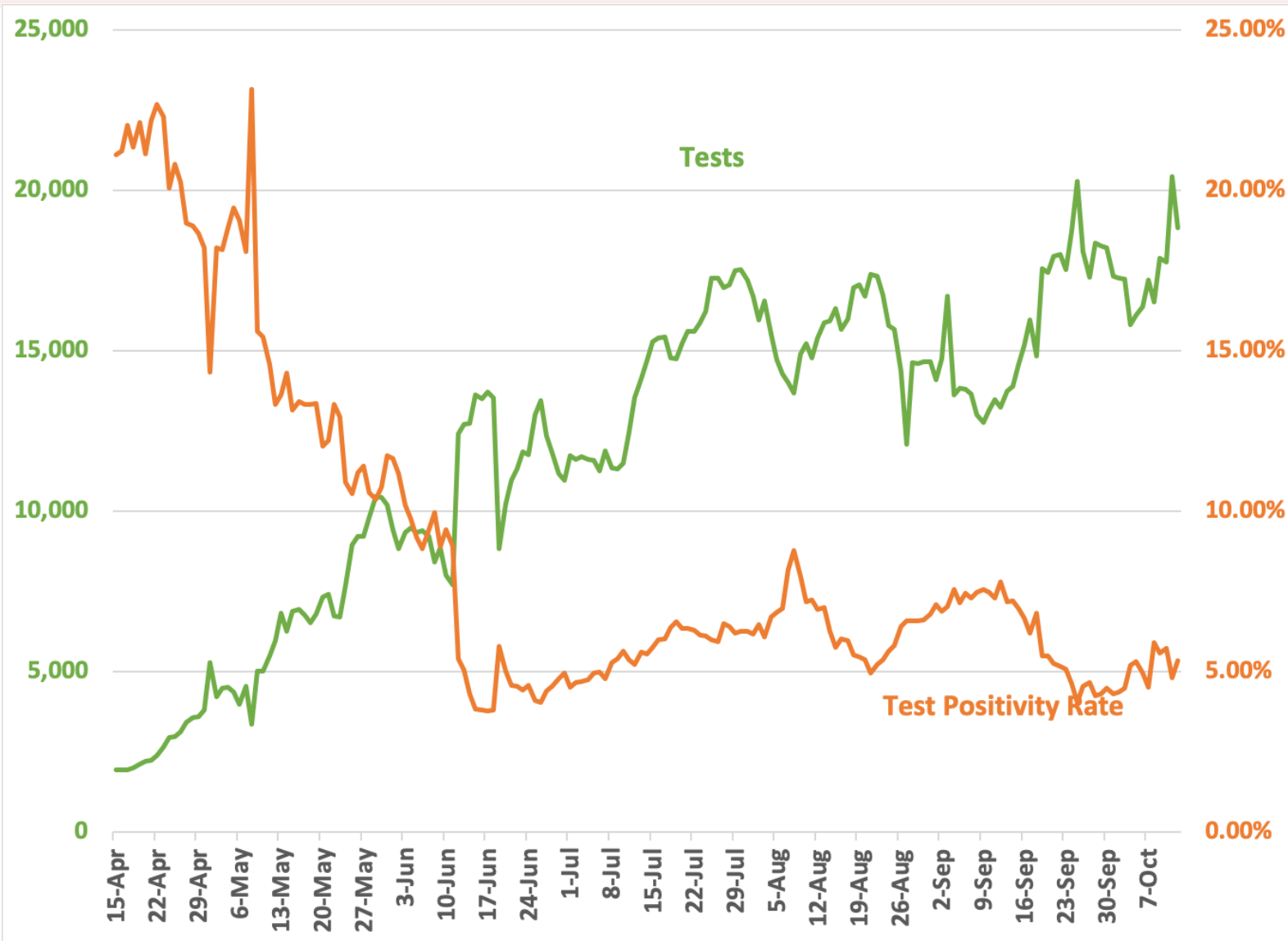
New confirmed cases increased sharply to around 1,000/day on average

- The level is back in the 900 to 1,100 cases/day range
- This could be a real trend or **may** be due to a spike in cases reported last Thursday (October 8th) that could have been from a backlog or delayed reporting

Currently hospitalized cases have increased

- This is a lagging indicator and so there may be a continued reversal from the recent declines

Testing levels are at the target range for a test-and-trace strategy



Tests per day are back near recent highs

- Testing levels are appropriate for a test-and-trace strategy
- Further reopening is estimated to require four to five times more testing along with lower case rates (See Rockefeller Foundation)

The test positivity rate has leveled off at around five percent

- Five percent is a suggested target

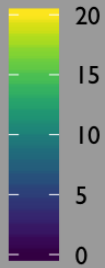


Case rates are higher across most of the Commonwealth

CASE COUNT

Source: VDH

Cases per 100,000



Yellow indicates at least 20 cases per 100,000

Virginia's southern counties continue to see high case levels

Most counties saw increases compared to last week

These data were updated October 13th and represent a seven-day average of the previous week

Case rates in most neighboring states have risen significantly

Over the last 7 days, Virginia had 11.5 (+15% from last week) new confirmed cases per day per 100,000

Very high case loads:

- Tennessee (28.7 new cases per 100k, +37% from last week)
- Kentucky (24.5, +23%)

High case loads:

- North Carolina (19.0, +21%)
- West Virginia (12.0, +22%)

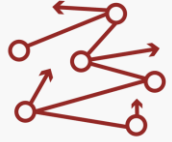
Lower case loads:

- District of Columbia (9.4, +65%)
- Maryland (9.6, +4%)

These data were updated October 13th and represent a seven-day average of the previous week



We've been monitoring recent, relevant literature



Oster et al. looked at age dynamics of COVID-19 infections in 767 hotspot counties in June and July

- The typical hotspot began with a significant increase in cases among people aged 18-24 years
- There was some regional variation, but, in the South Region (which includes Virginia), cases in other groups peaked two- to four-weeks after the peak among people aged 18-23 years



Moffitt and Ziliak examined the role of safety net programs during the pandemic

- Safety net programs (unemployment insurance, Medicaid, etc.) have not worked well in the pandemic
- There are specific populations that do not meet strict qualification criteria for programs like unemployment insurance or Medicaid, and those populations have seen significant declines in wellbeing due to COVID
- In other cases, programs such as free or reduced school lunches cannot function as intended
- These gaps could be addressed through targeted interventions or broader reforms

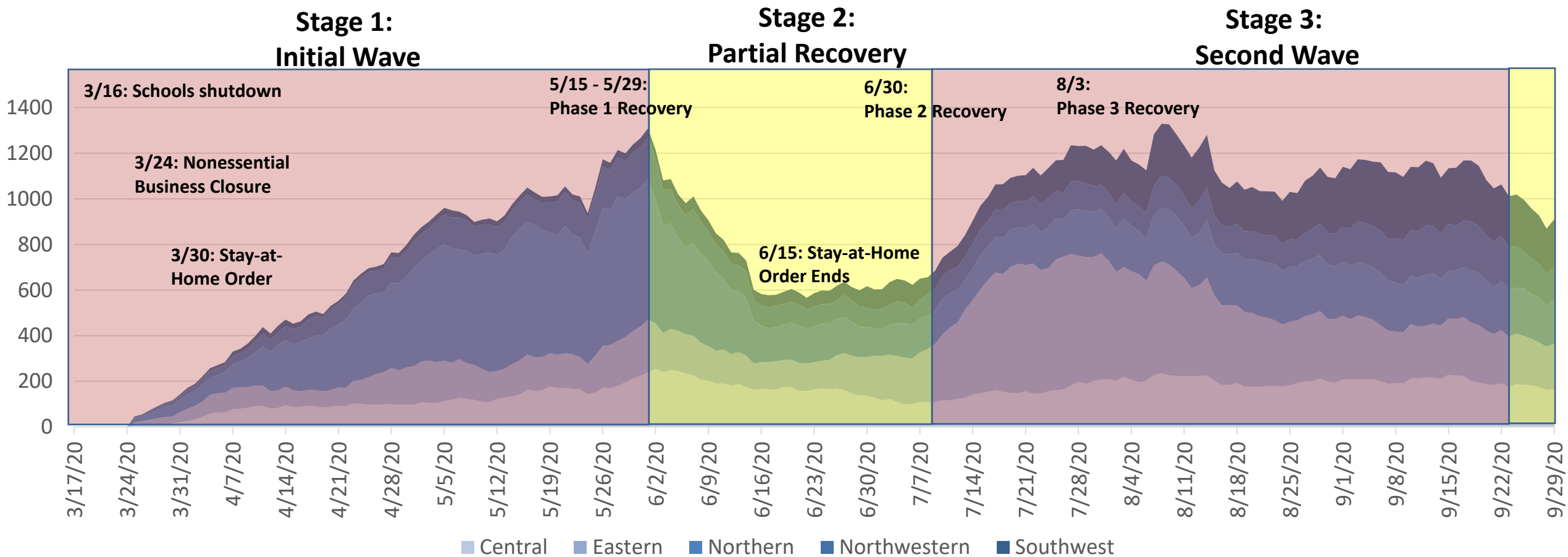


Gandolfini used a SEAIR to look at the optimal opening policy for schools

- The objective is to minimize the number of additional infections while maximizing in-person school days
- Because these objectives are in opposition, policymakers need to assess the relative value of a day of in-person instruction compared to a share of the school being infected
- To avoid any cases, reopening should not be attempted until cases are below 0.5 per 100,000
- For a higher acceptance of health risks, schools can reopen at higher levels of ambient infection



There have been two waves but for different parts of the state



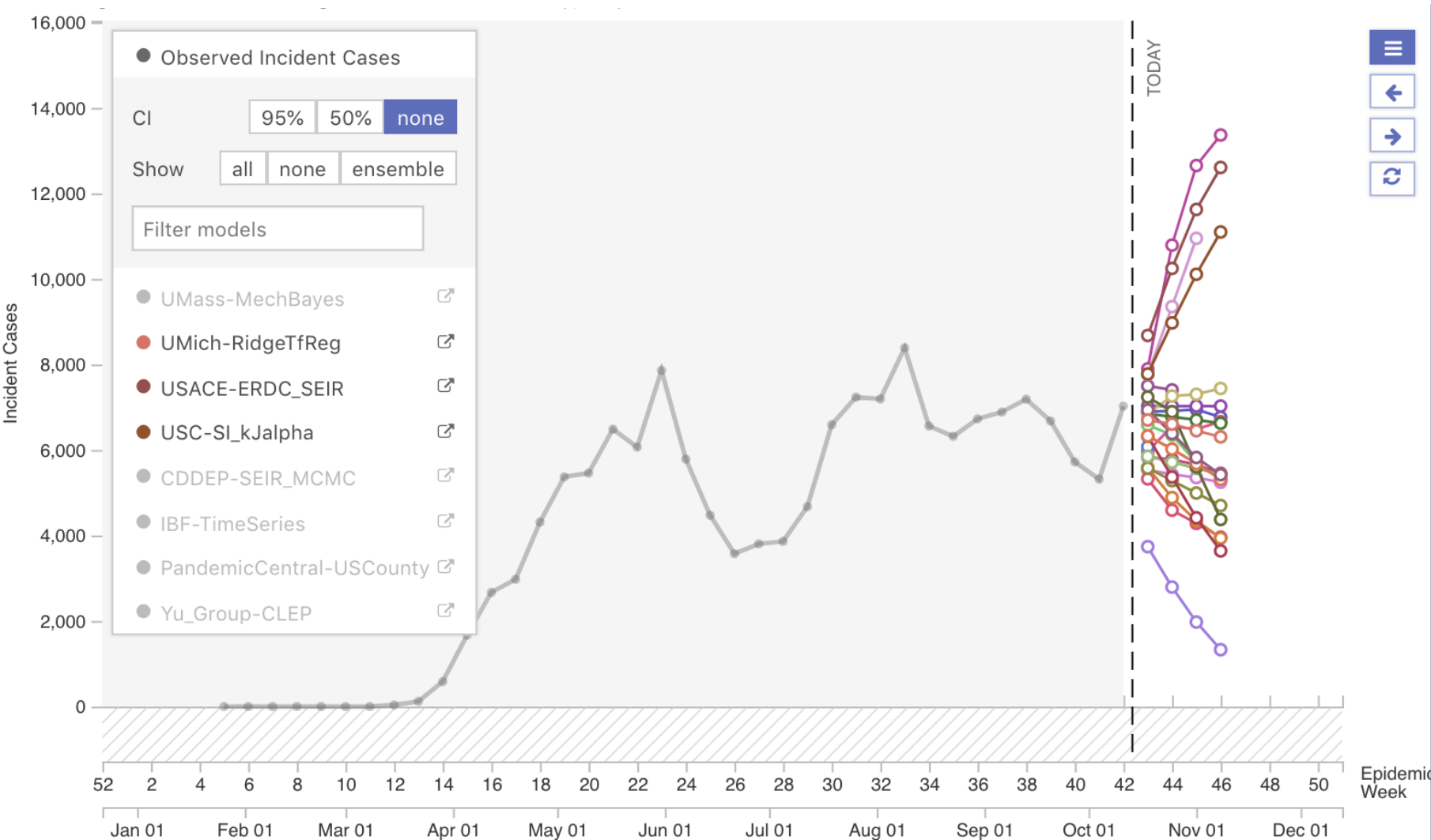
- Too little testing to know the true case load
- Cases mostly in the Northern Region

- Cases fell for the first half of June
- Cases flattened after stay-at-home order ended

- Cases spiked in July in the Eastern Region
- By August, case loads had grown substantially across Southwest Region
- In late-August/September, case rates grew across the state



Forecasts of cases are diverging, but average to a small decline



There is substantial variation in the model forecasts for cases

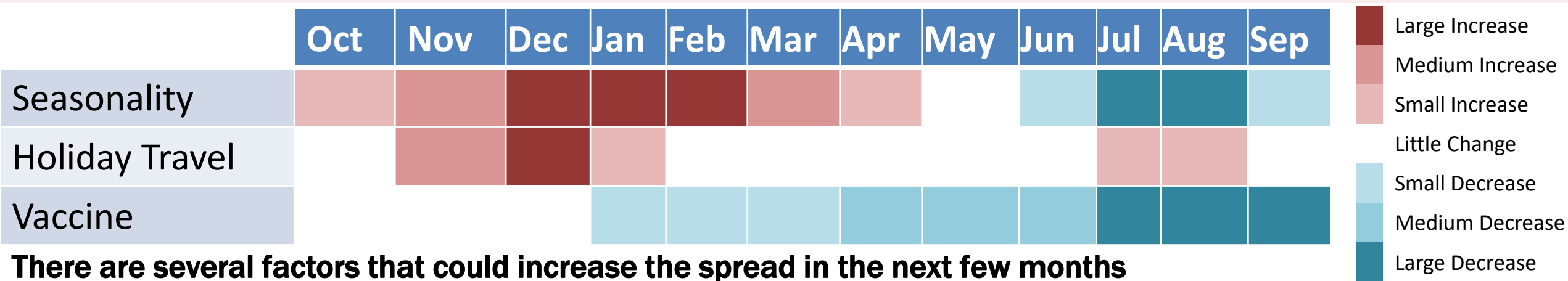
- The “average” model is predicting a slow decline in the case levels

The mechanisms driving the spread at this stage are very different than in the early stage

- Initially, people were not taking precautions or changing their behavior, so COVID spread exponentially
- Changing patterns of spread have required models to evolve

For short-term forecasts, assuming last weeks level is a good estimate

There are several triggers that could lead to increased spread



There are several factors that could increase the spread in the next few months


- Seasonal effects for COVID-19 could lead to more spread during the colder months
- Holiday travel could lead to increased spread, particularly from the mixing of age cohorts

A vaccine may become available around the turn of the year

- It is unlikely that there will be sufficient supply initially to significantly reduce the spread
- The vaccine will not be completely effective and so a large share of the population will need to be inoculated
- People may scale back preventative behaviors (such as distancing and mask wearing) too soon

There are likely to be long-term repercussions that need planning and preparation to mitigate

- Mental health problems may persist particularly among medical professionals and those directly affected
- Following the 1918 pandemic, there were higher rates of disability, mental illness, and other conditions



Discussion and Questions